Tri-Service Infrastructure Management Program

Infrastructure Strategies for Global Health Care

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Overview

- **About TIMPO**
  - **Keeping the end in mind:**
  - **Global military health care**
- **Infrastructure Strategies**
- **Expected TIMPO Projects**
- **Infrastructure Issues**

About TIMPO

TIMPO has developed integrated processes employing a unique tri-service organization to provide unified infrastructure services to support global military health care.

Integrated processes ...

- Centralized program management
- Decentralized project execution
- Strategic Business Functions
  - Army, Navy and Air Force provide infrastructure services for the entire medical enterprise
  - Core competencies based on best practices
- Professional technical management
  - Reduced overhead
  - Consolidated customer support

… tri-Service organization …

	Engineering	Customer Support	Configuration Management	Deployment Management	Implementation & Training
Air Force	◆ Design Engineering ◆ Security Engineering ◆ WWW Management	◆ Customer Support			◆ Implementation and Training Support
Army	◆ Network Management Support	◆ Hardware Maintenance & Sparing ◆ Network Monitoring ◆ Network Performance Management ◆ VTC Support		◆ Circuit Management ◆ Infrastructure Deployment	
Navy	◆ Capacity Planning		◆ Asset Mgt ◆ Capacity Management ◆ Security ◆ Standards		

… provide unified infrastructure services …

- Develop common infrastructure architecture
  - GII, NII and DII guidelines
  - DOD's Joint Technical Architecture (JTA)
  - Military Health Systems (MHS) Systems Architecture and Design Guidance (www.timpo.osd.mil)
- Defense Information Systems Network (DISN)
  - Compatibility with war fighters
  - Access to installations
  - Visibility into the network

… for global military health care.

- Common operating environment
- Standards-based infrastructure
- Global access
  - Full compatibility with service line and national allies
  - Partner with managed health care providers
- Robust, protected network

Infrastructure Strategies

- DISA Wide Area Network (WAN)
  - Asynchronous Transfer Mode (ATM)
  - Guaranteed bandwidth, Quality of Service (QOS)
  - Migration path to provide infrastructure for future networked services (video, voice)
- Router upgrade program
  - $2.5M per year for four-year lease
  - Multiple-vendor lease allows for flexibility
  - Avoid costs totaling $1.9M
  - Increased flexibility for technology refresh

Infrastructure Strategies

- **LAN upgrade project**
  - **Design and install unified, collapsed fiber backbone**
  - **Support the deployment of web-based applications**
  - **Switched ethernet connectivity at the desktop**
- **Accommodate migration of legacy systems**
  - **Implement WAN-based intra-regional intranets**
  - **Support distributed client-sever applications -- “Virtual Hospital”**

Infrastructure Strategies

- **Consolidate circuits**
  - **Reduce long-haul point-to-point circuits**
  - **Reduce cost, manage complexity, and eliminate back doors (security benefit)**
- **San Antonio Metropolitan Area Network**
  - **Fiber optic SONET ring in four states in Southwest United States**
  - **Engineering and installation: $1.4M**
  - **Save MHS $29,000 per month in connection charges**

Infrastructure Strategies

- **Y2K Infrastructure Deployment**
  - **Ensure viability of 1,200 medical facilities under the control of:**
    - 61 Army major organizations
    - 65 Navy major organizations
    - 101 Air Force organizations
  - **Fast track, multi-site, team method for regional deployment**
  - **TIMPO completion 26 Feb 1999**

Expected TIMPO Projects

- End-user devices for MHS
- Gateway routers for Emulated LANs
- Migrate MEDNET to ATM
- MHS Infrastructure MER development
- MHS Infrastructure Security

End-user devices

- **Scope: Provide PCs for the Military Health System enterprise beginning FY 2000**
  - **Army, Navy, and Air Force**
  - **Military medical schools**

  } **Approximately 95,000 PC**
  - **Service Major Commands and Headquarters**
  - **TRICARE Lead Agents and Health Affairs**
- **Deployment:**
  - **staggered deployment**
  - **3-year ramp-up lease program (FY 00-02)**
  - **estimated annual lease cost -- $70M**

Gateway Routers

- ELANs connect Military Treatment Facilities (MTFs) within TRICARE geographic regions
- Gateway routers support MHS regional Emulated LANs (ELAN)
  - Gateways route MHS traffic between ELANs
  - Gateway routers provide NIPRNet and Internet connectivity
  - Cisco 7204 and 7507 Routers being used

Gateway Routers

- Currently 5 gateway routers installed:
  - Walter Reed Army Medical Center, Washington DC
  - Malcolm Grow Medical Center, Washington DC
  - Denver DISA Megacenter (DMC)
  - Kelly DMC, San Antonio
  - Slidell DMC, Slidell, Louisiana
- Anticipate ELAN gateway routers installed:
  - North Island DMC, San Diego
  - Ogden DMC, Utah
  - Mechanicsburg DMC, Pennsylvania

MEDNET

- **Cost**
  - **TIMPO funded upgrade of Y2K non-compliant items**
    - Total of $772K for MEDNET Y2K upgrades
    - $738.4K (FY98 funds) for hardware, installation and network management
    - $33.5K (FY99) for BAMC MEDNET Y2K upgrade
  - **TIMPO funding 50% of MEDCOM's MEDNET costs in FY99 and 100% beginning FY00**
    - ~ $1.9M in FY99
    - ~ $3.1M beginning FY00

MEDNET

- **Benefits**
  - **Working to provide MEDNET IDNX to Army, Navy and Air Force sites**
    - **Southeast TRICARE Region (Region 3)**
      6 Army sites, 8 Navy sites, 6 Air Force sites
    - **Southwest TRICARE Region (Region 6)**
      4 army sites, 1 Navy site, 15 Air Force sites
  - **MEDNET connectivity will reside at a total of 70 sites**
  - **Network component Y2K upgrade by early 1999**
- **Expected TIMPO Project -- migrate MEDNET to ATM technology**

Infrastructure Minimum Essential Requirements (MER)

- Indentify collective requirements for MHS infrastructure
  - TIMPO collaborative effort
  - Capacity planning and design engineering inputs
  - Project and design infrastructure to meet requirements for MHS AIS deployments
- Initial briefing at 9 Mar 1999 Program Review Board (PRB)

Issue: Infrastructure Security

- **Securing the Enterprise**
  - **Tri-service regional intranets**
  - **Connection to managed care contractors**
  - **Legacy applications with risky Internet protocols**
- **Presidential Decision Directive (PDD) 63**
  - **ASD/C3I has identified Health Affairs as Infrastructure "Critical Asset Owner"**
- **Public Law**
  - **Health Insurance Portability and Accountability Act (HIPAA) privacy standards for patient data**
- **Risk assessment and risk management**

Securing the Global Health Care Network

- Layered security approach ("defense in depth")
  - Less expensive to acquire, maintain and upgrade
- Data encryption and authentication
  - Virtual Private Networks (VPN)
  - IPSec protocol & Public Key Infrastructure (PKI)
- Firewalls
  - More than 100 legacy AISs with high-risk protocols
  - MHS-managed firewalls protect host installation LANs as well as hospital networks

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